improved for a further image taking into account the scattering parameters. For example the voltage of the x-ray tube can be adjusted, if the examination region contains a metal implant which scatters and absorbs x-ray radiation to a particularly significant degree.

Segmentation S takes place for example using a threshold value method or a region-based method such as so-called region growing or region splitting or with the aid of edge extraction.

The scattering parameters can also be determined without segmentation S, using a dual source acquisition unit. Also just one of the two x-ray sources **8** of the dual source acquisition unit can emit x-ray radiation during the spiral acquisition for the inventive establishing of a topogram, while both x-ray detectors **9** detect the x-ray radiation penetrating through the examination region or scattered by the examination region. The first x-ray detector **9** is therefore used for the acquisition of individual x-ray projections, while the second x-ray detector **9** is used for the detection of a portion of the scattering radiation. Scattering parameters can then be derived from the signal of the scattering radiation detected by the second x-ray detector **9**. The invention is also advantageous when a dual source acquisition unit is used, because it allows better consideration of the scattered, detected x-ray radiation during the reconstruction of a further image of the examination region acquired using the two x-ray detectors **9**.

To perform an embodiment of the inventive method, an embodiment of the inventive computed tomography system has a reconstruction unit **14**, designed to reconstruct a 3D image of the examination region using the spiral acquisition. An embodiment of the inventive computed tomography system also has an image processing unit **15**, designed to establish multiple topograms of the examination region by way of parallel projections of the reconstructed image along different projection directions. An embodiment of the inventive computed tomography system also has a determination unit **16**, designed to determine acquisition parameters for a further acquisition of the examination region using at least one topogram. The reconstruction unit **14**, the image processing unit **15** and the determination unit **16** in the example shown here are configured as computer programs, in other words as software, which can be stored in an executable manner in each instance on a computer **12**. The data of the individual projections is transmitted from the gantry **1** of the computed tomography system to the computer **12** for reconstruction or further processing.

The reconstruction unit **14** and the image processing unit **15** are also designed to process the acquired data in real time and forward it to an output unit **11**. Thus for example the slice images of the examination region reconstructed during a spiral acquisition can be displayed directly on the output unit **11**.

The computer **12** is connected to an output unit **11** and an input unit **7**. The output unit **11** is for example one (or more) LCD, plasma or OLED screen(s). Outputting on the output unit **11** involves for example a graphical user interface for the manual inputting of patient data and for activating the individual units of the computed tomography system and for selecting acquisition parameters. Different views of the acquired data, in other words topograms, modified surfaces, or slice images can also be displayed on the output unit **11**. The input unit **7** is for example a keyboard, mouse, touch screen or even a microphone for voice input.

An embodiment of the inventive method can also be executed using a computer program product. To this end, the computer program product has program code segments for executing the method, when the program product is executed on a computer **12**. The computer program product can be designed for example to be loaded into a processor and/or the working memory of a programmable computer **12**. The computer program product can also be configured in the form of an executable file, which is stored for example on the computer **12** or on a server. The computer program product can also be stored on a computer-readable medium **13** such as for example a CD, a portable hard drive or a USB stick. For the different embodiments of the computer program product the computer **12** must have the respective requisites such as for example a corresponding working memory, a corresponding graphics card or a corresponding logic unit, so that the respective method steps can be executed efficiently.

FIG. **2** shows a flow diagram of an embodiment of the inventive method. The steps of an embodiment of the inventive method shown here and already described in more detail in FIG. **1**, based on a spiral acquisition of an examination region using a computed tomography system, are as follows:

- reconstruction R of a 3D image of the examination region using the spiral acquisition,
- first establishing E**1** of a first topogram of the examination region by a parallel projection of the image along a first projection direction,
- second establishing E**2** of at least one second topogram of the examination region by a parallel projection of the image along at least one second projection direction,
- first determination B**1** of acquisition parameters for a further acquisition of the examination region using at least one topogram,
- segmentation S of the examination region in the image,
- second determination B**2** of scattering parameters using the segmented image.

The spiral acquisition of an examination region using a computed tomography system can itself be configured as a step of an embodiment of the inventive method. This applies in particular to spiral acquisitions with a particularly large pitch greater than 1.5 (for an acquisition unit **17** with one x-ray source **8**) or greater than 3 (for an acquisition unit **17** with two x-ray sources **8**) as well as for spiral acquisitions with a particularly low dose of less than 200 μSv or less than 100 μSv.

What is claimed is:

1. A method for establishing a topogram, based on a spiral acquisition of an examination region using a computed tomography system, the method comprising:

- reconstructing a spatial three-dimensional image of the examination region using the spiral acquisition;
- establishing a first topogram of the examination region by a parallel projection of the spatial three-dimensional image along a first projection direction;
- computing an envelope of the examination region by segmenting the examination region in the spatial three-dimensional image; and
- determining scattering parameters based on the computed envelope of the segmented examination region.

2. The method of claim **1**, further comprising:

establishing at least one second topogram of the examination region by a parallel projection of the spatial three-dimensional image along at least one second projection direction.

3. The method of claim **2**, further comprising:

determining acquisition parameters for a further acquisition of the examination region using at least one of the first topogram and the second topogram.

4. The method of claim **3**, wherein the acquisition parameters are intensity values for x-ray radiation for dose modulation for the further acquisition, the method further including: